GENERAL INDEX.

The most important classified entries will be found under Contributors, Personals, and Reviews. New names and names of new genera, species, and varieties, are printed in **bold-face type**; synonyms in *italics*.

A

Abies alba, 403; balsamea 403
Aconitum Lycoctonum 186
Æthalium, formation of 221
Africa, Engler on plants of 135; Wildeman, Hua, and Chevalier on flora of central 405
Ageratina, Engler on 209
Agoseris, Osterhout on 424
Agriculture, appropriations for Department of 72
Air pressure, effect on growth, Schaible on 209
Alaska, Evans on Hepaticae 425
Algæ, change of form in 289; Chodat & Radais on 405; new or little known unicellular 100
Allen, T. F., work of 135
Allionia nyctaginea 182
Allium, Cepa, cell plate of 83; *fistulosum* 9; Osterhout on 424; ursinum 175, 176
Amblystegium, fluviatile **brevifolium** 22; riparium **longinerve** 22; serpens **subenerve** 22; subtilis 22; vacillans 22
Ambronn, H., personal 72, 288
Amelanchier, Piper on 210
America, Loesener on flora of central 135
Amoebae of Plasmodiophora, Nawaschin on 283
Ampelopsis quinquefolia 406
Andreæa petrophila 123
Andropogon maritimus 406
Angiopteris evecta, Shove on 427
Antennaria, alpina, Juel on parthenogenesis in 138; aprica 121; **fusca** 121; **oblancifolia** 121; racemosa 121
Anthracnose of apple tree 48
Anthriscus sylvestris, Vilmorin on 405
Aphyllon, Suksdorf on 425
Apple anthracnose 48
Appel, Otto, personal 143
Aquilegia, Canadensis 182; vulgaris 183
Arabis, confinis 193; **densicaulis** 190; **divaricarpa** 193; **elegans** 192; **fruticosa** 190; Holboellii 191, 192; **lignipes** 191; **pendulocarpa** 192; pulchra 192
Arctostaphylos Uva ursi, galls on 276
Arisaema, Dracontium 171; triphyllum 175
Arnica, alpina 63; amplexicaulis 201; amplexifolia 201; **caespitosa** 203; Chamissonis 201; Chamissonis **longinodosa** 199
Arnoldi, work of 208
Artemisia, Osterhout on 424; Suksdorf on 424; tenuis 63
Arthur, J. C., personal 72
Aslcepias, Cornuti 185; tuberosa 182
Aspidium Thelypteris 408
Asplenium, ebeneum 408; ebeneum × Camptosorus rhizophyllus 410; ebenoides, validity of 410; Maxon on 61; pinnatifidum 414; platyneuron 411
Aster Novae-Angliae, nucleolus of 254
Astragalus, crassicarpus 182; Jones on 424
Atkinson, G. F. 360; personal 216, 360
Audubon, J., personal, 430
Aulacomnium turgidum 15
Austin, work of 358
Autobasidiomycetes, Massee on 213
Avena barbata, awns of 113
Awns, of Avena barbata 113

B

Bailey's "Botany" 288; "Cyclopedia of American Horticulture" 277
Bailey, W. W., personal 143
Bacillus polychromogenes 378
Bacteria, chromogenic 278
Baker, E. G., work of 135
Barbula aciphylla 123; eustegia 17; rufipila 123
Barnes, C. R. 66, 67, 135, 136, 137, 141, 209, 211, 212, 214, 215, 277, 279, 280, 281, 282, 286, 287, 355, 357, 358
Basidiomycetes, Massee on 213
Beadle, C. D., 335
Beaufort, flora of 405
Bees, flower visits of oligotropic 130
Beille, work of 405

Belzung's "Anatomie et physiologie végétales" 281
Berchemia volubilis 407
Bessey, C. E., personal 144, 216, 360
Bessey, Ernst A. 418
Best, G. N., work of 71, 141.
Bicknell, E. P., work of 71, 210
Blanchan's "Nature's Garden" 132
Bokorny, Th., work of 286
Boltonia asteroides 130
Bondier, work of 405
Boodle, L. A., 427
Borraginaceæ, Gürke on 135
Botanical Society of America 216; annual meeting of 359
Brandegee, Katharine, work of 71, 210
Bray, W. L., work of 428
Brazil, notes of travel 125
Britten, James, work of 135
Britton, N. L., personal 430; work of 71, 405, 429, 431
Bromus, Shear on 135
Brown University, bequest to 431
Bryum, alpinum **denticulatum** 123; capillare 21; *carinatum* 20; crassirameum **Covillei** 21; *cymbuliforme* 20; **euryloma** 20; *naviculare* 20, 123; pseudotriquetrum 20
Bumelia, Small on 71
Burgess, E. S., work of 431
Buscalioni, work of 136
Busse, Walter, personal 142

C

Cactaceæ, root system of 348
Cacteæ, Brandegee on 71
Caesalpinia coriaria, galls on 276
California, Congdon on plants of 135
Callirrhoë alceoides 182
Calothrix confervicola 104
Caltha palustris, Thomas on 213
Calyceraceæ, Reiche on 136
Camera, vertical 205
Camptosorus rhizophyllus × Asplenium ebeneum 410
Camus, E. J., work of 405
Canna Indica 39
Capillitium, formation of 217
Cardamine rhomboidea 130
Cardot, Jules 12
Carduus canovirens 63
Carleton, M. A., personal 216, 288
Caryophyllaceæ of Mexico 58
Carpinus Caroliana 407
Castillo, D. del, work of, 405
Castilleia, Piper on 210; Suksdorf on 425
Catena, Chodat on 135
Cedar, von Schrenk on diseases of 429
Cell division in Fuligo varians 217
Cell plate, development and function of 73, 154
Celtis pumila, Hill on 424
Cephalotaxus Fortunei, Arnoldi on 426
Cerastium **sordidum** 58
Cereals, Carleton on introduction of 288; Swingle on breeding of 216
Cereus enneacanthus, roots of 350; giganteus, roots of 349
Ceterach officinarum × Phyllitis scolopendrium 411
Chamberlain, C. J., 66, 138, 140, 208, 211, 284, 357, 426
Chamot, E. M. 378
Chara, Allen on 135
Characeæ, Goetz on egg in 214
Chemotropism of pollen tube, Lidforss on 210
Chenopodium Botrys 406
Chevalier, A., work of 405
China, flora of central, Diels on 424
Chlorochytrium *Cohnii* 101; inclusum 107; *Lemnae* 100, 110
Chlorocystis, Cohnii 100; sarcophyci 103
Chodat, R., work of 135, 405
Churchill, J. R., personal 142
Chrysopsis, Pollard on 70
Chytridiales, Gobi on 426
Chytridineæ, Wildeman on 71
Cissus stans 407
Cladophora *lanosa* 100
Clements, F. E., personal 144
Clinton, G. P., personal 142
Clos, work of 405
Coccus rubei 267
Cockerell, T. D. A., 351
Codium tomentosum 409
Colchicum autumnale 182
Colletotrichum gossypii 52
Collins, J. F., personal 142, 143
Compositae, double fertilization in 252; Hieronymus on 135
Congdon, J. W., work of 135
Congress, International Botanical 40
Coniferae, Worsdell on ovules of 137
Conti, Pascal, work of 424
Contributors: Atkinson, G. F., 360; Barnes, C. R., 66, 67, 135, 136, 137, 141, 209, 211, 212, 214, 215, 277, 279, 280, 281, 282, 286, 287, 355, 357, 358; Beadle, C. D. 335; Bessey, E. A. 418; Cardot, J. 12; Chamberlain, C. J. 66, 138, 140, 208, 211, 284, 357, 426; Chamot, E. M. 378; Cockerell, T. D. A. 351; Cordley, A. B. 57; Coulter, J. G. 70; Coulter, J. M. 67, 71, 133, 136, 138, 139,

140, 141, 209, 210, 212, 213, 215, 279, 280, 282, 285, 287, 354, 418, 419, 420, 421, 422, 425, 427, 428, 429; Cowell, John F. 348; Cowles, Henry C. 355, 417, 428, 429; Cranefield, F. W. 131; Davis, Bradley M. 139, 427; Doherty, M. W. 403; Fairchild, D. G. 130; Harper, R. A. 217; Hefferan, Mary 261; Holzinger, John M. 125; Johnson, Duncan S. 1, 410; Kraemer, Henry 276; Land, W. J. G. 252; Lawson, Anstruther A. 145; Livingston, Burton E. 285, 289, 424; Loew, Oscar 278; MacMillan, Conway 318; Maxon, W. R. 415; McFarland, J. Horace 206; Moore, George T. 100; Murbach, L. 117; Nelson, Aven 64, 189; Nelson, Elias 122; Perrot E. 403; Preston, Carleton E. 351; Rimbach, August 171; Robertson, Charles 130; Schumann, K. 359; Smith, R. Wilson 361; Thériot, I. 12; Thiry, G. 378; Timberlake, H. G. 73, 154; Van Hook, J. M. 378; Waugh, F. A. 206; Wiegand, Karl M. 25

Convallaria majalis 25

Cook, O. F., work of 427

Copeland, E. B., personal 216

Cordley, A. B. 57

Coreopsis aristosa 130

Corydalis *cava* 9; nobilis 186; ochroleuca 186

Costantin's "La nature tropicale" 354

Coulter, J. G. 70

Coulter, J. M. 67, 71, 133, 136, 138, 139, 140, 141, 209, 210, 212, 213, 215, 279, 280, 282, 285, 287, 354, 418, 419, 420, 421, 422, 425, 427, 428, 429

Coulter, S. E. M., personal 72

Coulter, Stanley, "Catalogue of plants of Indiana," 421

Coville, F. V., personal 360

Cowell, John F. 348

Cowles, Henry C. 355, 417, 428, 429; personal 142

Cranefield, F. W. 131

Crataegus **Alabamensis** 323; **Alleghaniensis** 337; **aprica** 335, 337, 338; **Ashei** 339; Boyntoni 344, 345, 346; Britton on 71; coccinea 345; elliptica 342; flava 336, 337, 345; *glandulosa* 342; Harbisoni 341; Michauxi 342, 343; **pinetorum** 343; rotundifolia 345; **rubella** 344; Sargenti 339; **senta** 341; **sororia** 336; **straminea** 345; **venusta** 338

Cremer, M., work of 211

Crown-gall, Toumey on 213

Cruciferae, insects and 130

Cruciferae of Mexico 58

Cruciflorae, Martel on 405

Cryptanthe affinis **flexuosa** 195; **multicaulis** 194; Pattersoni 195; ramulosissima 195

Cryptogams of Wyoming, Nelson on 434

Cycads, Lang on 212

Cystopus candidus, Wager on 210

Cytology 1, 25, 73, 145, 154, 217, 252, 361, 394

Czapek, F., work of 287.

D

Dalla Torre, C. G., and Harms, H. "Genera Siphonogamarum" 67, 279

Dangeard, work of 405

Dasya elegans 409

Davis, Bradley M. 139, 427; personal 142

Davis, C. A., work of 419

Davis, K. C., work of 282

Day, David Fisher, sketch of 347

Deane, Henry, work of 209

Delphinium, Carolinianum, 182; Davis on 282; occidentale, Ramaley on 282

Dendrophagus, Toumey on 213

Dentaria bulbifera 182

Derschau, von, work of 214

Desmatodon, Porteri 17; systylius 16; **systilioides** 16

DeVries, Hugo, work of 212, 405

Dichodontium, *Olympicum* 13; pellucidum 14

Dicranella, debilis 14; Howei 15; laxiretis 14; varia 15

Dicranoweisia, compacta 123; **subcompacta** 122

Dicranum, angustum 15; Bonjeani 15; *palustre* 15; viride **laeve** 15

Dictyophora Ravenelii, Scofield on 282

Dicyota dichotoma 409

Diels, L., work of 424

Diodia teres 406

Dintera, Stapf on 425

Diplococcus roseus 269

Disciflorae, Beille on 405

Diseases, anthracnose of apple 48; of forest trees, von Schrenk on 288

Dodecatheon, conjugens 62; cylindrocarpum 63; pulchrum 62; Suksdorf on 424

Doherty, M. W. 403

Dorner's "Resin ducts and strengthening cells of Abies and Picea" 418

Draba, montana 189; **Yellowstonensis** 189

Dryopteris cristata × marginalis 414

Drymaria **Townsendii** 58

Duggar, B. M., personal 288, 359

Durand, work of 424
Dutailly, work of 405

E

"Earth and Air" 288
Eaton, Daniel C., personal 142
Ectocarpus siliqulosus 409
Echinocactus Wislizeni, roots of 349
Ecology, Bray on 428; Jones on 424; Ule on 428
Egg in Characeæ, Goetz on 214
Eleutera, Stuntz on 71
Embryology of Taxus baccata, Jäger on 357
Embryos, Nathanson on parthenogenetic 138; of Peperomia pellucida 1; -sac of Canna Indica 39; of Convallaria majalis 25; of Potamogeton foliosus 31
Endosperm of Peperomia pellucida 1
Engler, A., "Das Pflanzenreich" 432; "Die natürlichen Pflanzenfamilien" 279, 358, 420; "Monographien afrikanischer Pflanzenfamilien" 419; work of 135, 209
Enzymes of yeast, Cremer on 211
Erigeron, acris *Droebachensis* 198; compositus 63; Droebachensis 198; glabratus 198; multifidus 63; multifidus discoideus 199; multifidus **incertus** 198; Philadelphicus, double fertilization in 254; Piper on 210; strigosus, double fertilization in 254; trifidus 63; **Yellowstonensis** 198
Eryngium, Britten and Baker on 135
Erysipheæ, Freeman on Minnesota 282
Erythronium, albidum 176, 180; mesachoreum 180
Erythrotrichia ceramicola 409
Epilobium, glaberrimum 194; Oregonense gracillimum 194; palustre 194; **Wyomingense** 194
Epipactis palustris 73
Evans' "Alaskan Hepaticae" 419; work of 425
Eucalypts, Deane and Maiden on 210
Euphorbia polygonifolia 407

F

Fagus, Diels on 424
Fairchild, D. G. 130
Faxon, Edwin, personal 142
Fern hybrids 410
Fernald, M. L., personal 142; work of 136
Fertilization, double in Caltha palustris, Thomas on 425; in Compositae, double 252; of Batrachospermum, Osterhout on 139
Field Columbian Museum 144
Fischer, Hermann, work of 286
Fissidens, bryoides gymnandrus 16, 123; *gymnandrus* 16; subbasilaris **Bushii** 16
Fiahault, work of 404, 405
Floras, Gillot on local 405; of southeastern Minnesota, Wheeler on 282; of Lake Nyassa, Engler on 209
Flowers and insects 130
Forests of the United States, Gannett on 215
Forestry, Yale School of 430
Form, Noll on 211
Formic aldehyde, Polacci on 358
Fossil plants, Knowlton on 141
Fox, Wm. J., personal 216
Franchet, A., work of 71
Frank, A. B., death of 359
Freeman, E. M., work of 282
Fritillaria, imperialis, cell plate of 83; Meleagris 175; tenella, double fertilization in 252
Fritsch, Karl, work of 425
Fuligo septica, nuclear division in 217, 220
Fungi, Hennings on African 135; Patterson on 71

G

Galloway, B. T., personal 143, 431
Galls, Küster on anatomy of 140; origin of tannin in 274
Galium, Jones on 424
Gallardo, A., work of 405
Gannett, Henry, work of 215
Garden, Missouri Botanical 143; Journal of the New York Botanical 430
Gaurella 351; *guttulata* 351
Gauropsis 351; canescens 351; guttulata 351
Gelidium crinale 409
Gentiana, cruciata 185; Pollard on 70; puberula 186
Geotropism, Noll on 134
Gerber, work of 405
Germination and light, Heinricher on 215
Gesneriaceæ, Fritsch on 425
Geum, Dutailly on 405
Gidon, work of 405
Gilia, Suksdorf on 424
Gillot, work of 405
Ginkgo, Seward and Gowan on 139
Gladiolus, multipolar spindle in 145
Gleosporium, fructigenum 52; **malicorticis** 48, 57; nervisequum 52.
Gnaphalium, **thermale** 121; Wrightii 122
Gobi, work of 426, 427

Goebel's "Organography of plants" 355
Goetz, Georg, work of 214
Gonolobus tuberosus 407
Goodale, George L., personal 142
Gowan, Miss J., work of 139
Gracillaria confervoides 409
Graebner, P., work of 136
Grasses, Nash on 71
Gray, Asa, personal 430
Griffiths, David, personal 430
Grimmia, alpestris 18, 19; **Holzingeri** 123; lamellosa 19; mollis 123; montana 18; montana **Idahensis** 18; **pseudo-montana** 18; subsulcata 18, 123
Grindelia squarrosa 182
Grinnellia Americana 409
Growth of lower plants, Ono on 422
Guéguen, work of 404
Gürke, M., work of 135
Gymnosperms, Arnoldi on 426
Gymnostomum, curvirostre commutatum 12; curvirostre *scabrum* 12; *microstomum* 13; *murale* 13; *Wimmerianum* 13

H

Halacsy's "Conspectus Florae Graecae" 419
Halsted, B. D., personal 216, 360
Harper, R. A. 217; personal 216, 360
Hartig's "Lehrbuch der Pflanzenkrankheiten" 417
Heckeria, embryo sac of 9
Hefferan, Mary 261
Heinricher, work of 215
Helianthus, annuus 257; Nawaschin on 213; scaberrimus 186
Heller's "Catalogue of North American Plants" 420; personal 430
Hemerocallis fulva, cell plate of 83
Henderson, L. F., work of 135
Hennings P., work of 135
Hepaticae, Evans on Alaskan 425; Stephani on 70, 135
Herbaria, Castillo, Flahault, and Moullefarin on 405
Herbarium, of H. N. Patterson 144; Rocky mountain 189
Herbs, perennial 171
Heuchera ovalifolia 118; **saxicola** 118
Hieronymus, G., work of 135
Hill, E. J., work of 424
Hitchcock, A. S., personal 143
Hochreutiner, work of 405
Hofmannia, Chodat on 135
Hollick, C. A., personal 216, 360
Holzinger, John M. 125; work of 425
Hottes, C. F., personal 143
Hua, work of 404, 405
Huber, on Amazon flora 405; work of 136
Hunn and Bailey's "Amateur's practical garden book" 131
Hy, work of 405
Hyacinthus, candicans 176; orientalis, cell plate of 83
Hyatt, James, work of 431
Hybrids, Asplenium ebeneum × Camptosorus rhizophyllus 410; Léveille and Hy on 405
Hybridization, Webber on 138
Hydastylus, Bicknell on 210
Hydathodes, Shibata on 429
Hymenophyllaceæ, Boodle on 427
Hymenophytum, Stephani on 70; *commutatum* 12; microstomum 13; *murale* 13
Hypnea musciformis 409
Hypnum, aduncum 124; **Cardoti** 124; cupressiforme resupinatum 23; fluitans brachydictyon **Holzingeri** 124; Halleri 22; molle Schimperianum 23; ochraceum uncinatum 124; pallescens 21; polygamum 124; *resupinatum* 23; *Schimperianum* 23; stellatum 124; uncinatum 21; uncinatum subjulaceum **Holzingeri** 125
Hypoxis hirsuta 175

I

Idaho plants, Henderson on 135
Ilex, Cassine 406; glabra 407; opaca 407
Infusoria, Yasuda on 285
Insects, flowers and 130
Iris versicolor, cell plate of 83
Ito and Matsumura's "Tentamen Florae Lutchuensis" 207

J

Jäger, L., work of 357
Jelliffe's "Catalogue of the flora of Long Island" 420
Johannsen's "Das Aether-Verfahren" 280
Johnson, Duncan S. 1, 410; work of 208
Jones, M. E., work of 424
Juel, work of 136, 138
Juncus tenuis, Wiegand on 425
Juniperus Virginia 406, 407

K

Keeler's "Our native trees" 133
Kellerman, W. A., work of 141
Kennedy, G. G., personal 142; work of 142
Kennedy, P. B., personal 142

King, Cyrus A., personal 359
Klondike, Britton on flora of 405
Knowlton, F. H., work of 141
Knuth's "Handbuch der Blüthenbiologie" 143
Kny, L., work of 286
Koehne, E., work of 424
Koning's "Der Tabak" 278
Kraemer, Henry 276
Krasan, work of 405
Kuhnia eupatorioides 182
Kuhnistera, candida 182; purpurea 182
Kuntze, Otto, work of 358
Küster, work of 140

L

Labiatae, Gürke on 135
Laboratory table, Rostowzew on 215
Lacinaria, punctata 182; squarrosa 183
Land, W. J. G. 252
Lang, W. H., work of 212
Langlois, A. B., death of 359
Larix, Americana, cell plate of 83; Europaea, cell plate of 83
Larkspur, Wheeler on 282
Lawson, Anstruther A. 145, personal 72
Leaves, Clos on floral 405
Lemmermannia, Chodat on 135
Linnaeus's Systema Naturae, Britten on 429
Lenticels, Devaux on 355
Lepidium, apetalum 190; **pubicarpum** 189
Leskea *patens* 22
Lesquereuxia *patens* 22
Lessonia, fuscescens 321; littoralis 318; nigrescens 321
Léveille, work of 405
Lidforss, B., work of 210
Light, and germination, Heinricher on 215; and proteids, Palladine on 214
Lilium, longiflorum, cell plate of 83; Martagon 176; double fertilization in 252; Philadelphicum, double fertilization in 252; superbum 181; tigrinum, double fertilization in 252
Linnaea, Graebner on 136
Linnaeopsis, Engler on 209
Linum usitatissimum 69
Listera, Suksdorf on 425
Lithospermum angustifolium 182
Liverworts, division of the cell and nucleus in 394
Livingston, Burton E. 285, 289, 424; personal 72
Lloyd, F. E., work of 71
Lochman's "Maples of North America" 143
Loesener, Th., work of 135
Loew, E., personal 143
Loew, Oscar 278; personal 359; work of 214
Long, W. H., work of 429
Longyear, B. O., work of 419
Lotsy's "Alkaloids in Cinchona" 279
Lounsberry's "A guide to the trees" 132
Lupinus, humicola **Tetonensis** 120; Pollard on 70; **ramosus** 120
Lutz, work of 404
Lycopodium, Lloyd and Underwood on 71
Lythraceæ, Koehne on 424

M

Maceration fluid, Richter on 215
Macfarlane, J. M., personal 143
Machaeranthera, **superba** 197; canescens 197; subalpina 197
MacMillan, Conway 318
Macrophoma curvispora 57
Madia, Suksdorf on 424
Magnus, work of 405
Maiden, J. H., work of 209
Maire, R., work of 405
Maize, Webber on xemia in 284
Makino's Icones Florae Japonicae 418
Malinvaud, Ernest, work of 70
Mamillaria, Brandegee on 210
Maples of North America 143
Marchantia, division of the cell and nucleus in 394
Marsilea, Nathanson on parthenogenesis in 138
Martel, work of 405
Massee, George, work of 213
Matthiola, Conti on 424
Maxon, W. R., 415; work of 71
McFarland, J. Horace 206
McIlvaine's "One Thousand American Fungi" 144
Medeola Virginiana 181
Megalopus, Engler on 209
Meister, Fr., work of 70
Melanthaceæ, Rydberg on 425
Melobesia pustulata 410
Melothria pendula 406
Mentha, Malinvaud on 70
Merrow, H. L., personal 143
Mertensia, **amoena** 195; Fendleri 196; foliosa 196; lanceolata 196; oblongifolia 196
Mesadenia tuberosa 176
Meyer, A., work of 212
Microbryum Floerkeanum Henrici 12
Micrococcus, agilis 268; a new chromogenic 261; carneus 267; carnicolor 269;

cumulatus 268; fragilis 268; haematodes 267; persicus 267; rosaceus 269; roseus 268; roseus **flavus** 272; roseopersicus 268; rubellus 267; rubens 267; rubiginosus 267; sarcinoides 267; subcarneus 268
Micrometry, international unit of 404
Millspaugh's "Plantae Insulae Ananasensis" 280; "Plantae Utowanae" 280
Mimulus, Suksdorf on 425
Minnesota, Erysipheæ, Freeman on 282; Wheeler on flora of southeastern 282
Miyake, K., work of 141
Molds, determination of 404
Monoclea, Stephani on 70
Monocotyledons, embryo-sac of 25
Moore, A. C., personal 72, 142
Moore, George Thomas 100
Morocco, Camus on flora of 405
Morris, E. L., work of 425
Morus rubra 407
Mosses, new North American 122; of North America 12; von Derschau on teeth of 214
Moullefarin, work of 405
Muhlenbergia, a new journal 430
Murbach, L. 117
Mushrooms, Boudier on 405; Dangeard on 405; instruction concerning 403; Maire on 405
Mussat, work of 404
Mutisiaceæ, Franchet on 71
Myxomycetes, Nawaschin on nuclear division of 282; nuclear and cell division in 217; Sturgis on 71
Myrica Gale 407
Myrmecophily, Buscalioni and Huber on 136

N

Narcissus Tazetta, Lidforss on 210
Nash, George V., work of 71
Nathanson, A., work of 138, 213, 282
Naturalist, O. S. U., a new journal 431
Neckera, Stuntz on 71
Nelson, Aven 64, 189; work of 71, 424
Nelson, Elias 122
Neogoetzea, Engler on 209
Neovossia, **Iowensis** 273; Moliniae 273
New York Botanical Garden, Journal of 430
Nitophyllum, Nott on 287
Noll, Dr. F., work of 134, 211, 214
Nomenclature, Cook on types in botanical 427; International Botanical Congress on 404; international periodical for 404; phytogeographic 404
North America, Bray on relation of flora to South America 428
North Carolina, Johnson on flora of 405
Nothocalcis cuspidata 182
Nott, Charles P., work of 287
Nucleus, and cell plate 73, 154; Chodat on 405; division in Fuligo varians 217; in mushrooms 405; Nawaschin on division of 283

O

Œnothera, biennis 351; canescens 351; humifusa 406
Ohio, Kellerman on non-indigenous flora of 141
Olive, E. W., personal 142
Ono, N., work of 422
Onoclea sensibilis 408
Opuntia, fulgida, function of spines 351; fulgida, roots of 349, 350; non-sexual propagation of 351; Whipplei, roots of 349
Orchis, latifolia 73; mascula 182
Orthotrichum, arcticum 19; **Idahense** 19; Lyellii **Howei** 20; *papillosum* 20
Osmunda cinnamomea 362; Claytoniana 363; regalis 408; spore mother cells of 361
Osterhout, G. E., work of 424
Osterhout, W. J. V., work of 139
Ovules of Coniferae, Wordsell on 137

P

Padina pavonia 409
Palla, E., personal 430
Palladine, work of 214
Pallavicinius, Stephani on 70
Palmer and Keeley's "Structure of the diatom girdle" 421
Paris's "Index Bryologicus" 279
Paris quadrifolia 182
Parthenogenesis, in Marsilea, Nathanson on 138; of Antennaria alpina, Juel on 138
Patterson, Flora W., work of 79; herbarium of H. N. 144
Peck, C. H., work of 431
Pelæa latropurpurea 414
Penstemon, Suksdorf on 425
Peperomia pellucida, endosperm and embryo of 1
Perennials, physiological observations on 171
Pericycle, Fischer on 286
Periodical, international for names 404
Peronspora parasitica, Wager on 210
Perrot, E. 403
Persea Carolinensis 407
Personal; Ambronn, H. 72, 288; Appel, Otto 143; Arthur, J. C. 72; Atkinson,

G. F. 216, 360; Audubon, J. J. 430; Bailey, W. W., 143; Bessey, C. E. 144, 216, 360; Busse, Walter 142; Britton, N. L. 430; Carleton, M. A. 216, 288; Churchill, J. R. 142; Clements, F. E. 144; Clinton, G. P. 142; Collins, J. F. 142, 143; Copeland, E. B. 216; Coulter, S. E. M. 72; Coville, F. V. 360; Cowles, H. C. 142; Davis, B. M. 142; Duggar, B. M. 288, 359; Eaton, D. C. 142; Faxon, E. 142; Fernald, M. L. 142; Fox, Wm. J. 216; Frank, A. B. 359; Galloway, B. T. 143, 431; Goodale, G. L. 142; Gray, Asa 430; Griffith, David 430; Halsted, B. D., 216, 360; Harper, R. A. 216, 360; Heller, A. A. 430; Hitchcock, A. S. 143; Hollick, C. A. 216, 360; Hottes, C. F. 143; Kennedy, G. G. 142; Kennedy, P. B. 142; King, Cyrus A. 359; Langlois, A. B. 359; Lawson, A. A. 72; Livingston, B. E. 72; Loew, E. 143; Löew, O. 359; Macfarlane, J. M. 143; Merrow, H. L. 143; Moore, A. C. 72, 142; Olive, E. W. 142; Palla, E. 430; Raciborski, M. von 430; Rimbach, A. 144; Roberts, H. F., 143; Robinson, B. L. 142, 216; Schaffner, J. H. 431; Schrenk, H. von 143, 288; Seymour, A. B. 143; Sheldon, J. L. 144; Smith, R. W. 359; Stevens, F. L. 72; Swingle, D. B. 216; Thaxter, R. 142; Toumey, J. W. 72; Trelease, Wm. 216; True, R. H. 142; Underwood, L. M. 430; Webb, J. E. 72; Williams, E. F. 142; Woods, A. F. 431; Zukal, H. 216

Petrocelis cruenta 100

Peucedanum foeniculaceum 182

Pezizineæ, Durand on 424

Phaius Blumei, Nawaschin on 213

Phascum cuspidatum **Americanum** 12

Phaseolus vulgaris, cell plate of 83

Phlebodium aureum × Polypodium vulgare elegantissimum 411

Phlox, andicola 63; Suksdorf on 424

Photography in botany and in horticulture 204

Photosynthesis, Miyake on 141; Polacci on 358

Phragmites communis 273

Phyllitis scolopendrium × Ceterach officinarum 411

Phyllodoce, empetriformis 63; intermedia 63

Physmatomyces, Rehm on 424

Physalis longifolia 182

Pinus Taeda 407

Piper, embryo sac of 9

Piper, C. V., work of 210

Pisum sativum, cell plate of 83

Plantago major 176

Plasmodiophora brassicae, Nawaschin on 282

Plasmodium, Nawaschin on formation of 283

Platanthera montana 182

Plate, development and function of the cell 73, 154

Plowright, work of 405

Polacci, Gino, work of 358

Pollard, C. L., work of, 70, 425

Pollen mother cells of Gladiolus 148

Pollination and seed dispersal, Ule on 428

Polyides rotundus 100

Polypodium incanum 407; vulgare elegantissimum × Phlebodium aureum 411

Polyporus carneus, Schrenk on 429; juniperinus, Schrenk on 429

Polystichum aculeatum × angulare 411

Polytrichum Jensenii, Holzinger on 425

Porter, T. C., work of 431

Post, Tom von, work of 358

Potentilla, Piper on 210

Potomogeton foliosus 31

Prantl's "Lehrbuch der Botanik" 66

Prasiola leprosa 104

Pressure, Schaible on effect of air 209

Preston, Carleton E. 351

Primula, Wiegand on 210

Proteids, Bokorny on storage of 286; and light, Palladine on 214; vacuoles of gymnosperms, Arnoldi on 208

Protobasidiomycetes, Massee on 213

Protoccoideæ, Chodat on 135

Protoplasm, Kny on intercellular living 286

Pseudoleskea, atrovirens 22; Best on 71, 141; denudata Holzingeri, 124; patens 22; radicosa 124

Psoralea esculenta 182

Psorotheciopsis Rehm on 424

Pterogonium gracile **Californicum** 21

Pylaisia polyantha **drepanioides** 21

Pythium tenue, Gobi on 427

Q

Quercus, aquatica 407; galls on 274, 276; nigra 407; virens 407

R

Raciborski, M. von, personal 430

Radais, work of 405

Rafinesque's "Western Minerva" 216

Ramaley, Francis, work of 282
Ranunculus, Davis on 282
Rehm, H., work of 424
Reiche, Karl, work of 135
Report of Michigan Academy of Science 419
Reviews: Bailey's "Cyclopedia of American Horticulture" 277; Belzung's "Anatomie et physiologie végétales" 281; Blanchan's "Nature's garden" 132; Costantin's "La nature tropicale" 254; Coulter's "Catalogue of the plants of Indiana" 421; Dalla Torre, C. G. and Harms, H. "Genera Siphonogamarum" 67, 279; Dorner's "Resin ducts and strengthening cells of of Abies and Picea" 418; Engler's "Die Natürlichen Pflanzenfamilien" 279, 420; "Monographien afrikanischer Pflanzenfamilien" 419; Evans' "Alaskan Hepaticae" 419; Goebel's "Organography of plants" 355; Halacsy's "Conspectus Florae Graecae" 419; Hartig's "Lehrbuch der Pflanzenkrankheiten" 417; Heller's "Catalogue of North American plants" 420; Hunn and Bailey's "Amateur's practical gardenbook" 131; Ito and Matsumura's "Tentamen Florae Lutchuensis" 207; Jelliffe's "Catalague of the flora of Long Island" 420; Johannsen's "Das Aether-Verfahren" 280; Keeler's "Our native trees" 133; Koning's "Der Tabak" 278; Lotsy's "Alkaloids in Cinchona" 279; Lounsberry's "A guide to the trees" 132; Makino's "Icones Florae Japonicae" 418; Millspaugh's "Plantae Insulae Ananansensis" 280, "Plantae Utowanae" 280; Palmer and Keeley's "Structure of the diatom girdle" 421; Paris's "Index Bryologicus" 279; Prantl's "Lehrbuch der Botanik" 66; Rydberg's "Flora of Montana" 61; Scott's "Studies in fossil botany" 352; Stone's "Plants of Lake Quinsigamond" 419; Strasburger, Noll, Schenk, and Schimper's "Lehrbuch der Botanik" 67; Urban's "Flora of the West Indies" 421; Warburg's "Monsunia" 207; Wiesner's "Die Rohstoffe des Pflanzenreiches" 66, 279; Ward's "Cycadeoidea of the Black hills" 419; Wilson's "The cell" 65; Wood's "Stigmonose" 281; Zeiller's "Éléments paléobotanique" 416
Rhabdonia tenera 409
Rhadinocladia, Schuh on 135
Rheotropism, Juel on 136
Rhizidiomyces ichneumon, Gobi on 426
Rhode Island Summer School for nature study 143
Rhus Toxicodendron 406
Ribes, leptanthum 119; **saximontanum** 119
Richter, Oswald, work of 215
Rimbach, August 171; personal 144
Roberts, H. F., personal 143
Robertson, Charles 130
Robinson, B. L., personal 142, 216
Rolland, work of 403
Roots of Cactaceæ 348
Rosa, **grosse-serrata** 119; pisocarpa 120; Woodsii 120
Rostowzew, S., work of 215
Rowlee, W. W., work of 71
Rudbeckia speciosa 257; Nawaschin on 213
Rydberg, P. A. "Flora of Montana" 61; work of 71, 425

S

Sabal Adansonia 408
Sagittaria lancifolia 408
Salix, Coville on 425; Piper on 210; Rowlee on 71; Seeman on 425
Salts, Loew on 214
Salvia, Fernald on 136; pratensis 186
Salts, Ono on effect on growth 422
Sarcina mobilis 269; rosea 269
Sarcophycus potatorum 102
Sargassum vulgare 409
Saururus cernuus, Johnson on 208; embryo sac of 9
Saxifraga, *bronchialis* 119; **cognata** 118; Piper on 210; Wiegand on 210
Schaffner, J. H., personal 431
Schaible, Fr., work of 209
Schenley Park, botanical school 430
Schinz, Hans, work of 70
Schrenk, Hermann von, personal 143, 288; work of 429
Schuh, R. E., work of 135
Schumann, K. 359; work of 135
Scilla bifolia 175
Scofield, C. S., work of 282
Scolopendrium vulgare × Ceterach officinarum 411
Scott's "Studies in fossil botany" 352
Sedum Aizoon 186
Seeds, dispersal and pollination, Ule on 428; Heinricher on 215
Seeman, O. V., work of 425
Senecio, Rydberg on 71
Setchell, W. A., work of 142
Seward, A. C., work of 139
Seymour, A. B., personal 143

Shear, C. L., work of 135
Sheldon, John L., personal 144
Shibata, work of 429
Shove, R. F., work of 428
Silene, **Tetonensis** 117; Watsoni 117
Silphium, double fertilization in 256
Sinapis alba 69
Sisyrinchium, Bicknell on 71, 210; Californicum 210
Sisymbrium, canescens 64; **microtites** 59; **umbrosum** 60; **Wootonii** 59
Small, J. K., work of 71
Smilax, Bona-nox 406; Diels on 424; rotundifolia 407; tamnoides 407
Smith, C. H., bequest 431
Smith, R. Wilson, 361; personal 359
Solanum, Fernald on 136
Solidago, **dilatata** 196; multiradiata scopulorum 197; Pollard on 70; sempervirens 406
Sophia canescens 64
Sorus, development of in Lessonia littoralis 332
Sphaeropsis malorum 48
Sphagna, Warnstorf on 210, 213
Spindle, achromatic 361; multipolar in Gladiolus 145
Spore, formation in myxomycetes 217; mother cells of Osmunda regalis 364; Nawaschin on 284
Stahl, E., on mycorhiza 68
Stangeria paradoxa, Lang on 212
Stapf, work of 425
Staphylea *pinnata* 9
Starch, in leaves of evergreens in winter, Miyake on 141; Meyer on 212
Stenanthella, Rydberg on 425
Stephani, Franz, work of 70, 135
Stevens, F. L., personal 72
Stigeoclonium, change of form in 289
Stilbum vulgare, Massee on 213
Stimulus, Noll on form as 211
Stipa avenacea, mechanics of awn 113
Stipe in Lessonia 326
Stone's "Plants of Lake Quinsigamond" 419
Strasburger, Noll, Schenk, and Schimper's "Lehrbuch der Botanik" 67
Stuntz, S. C., work of 71
Sturgis, W. C., work of 71
Succisa pratensis 176
Suksdorf, W. N., work of 135, 424, 425
Swingle, D. B., personal 216
Symphyogyna, Stephani on 70

T

Table, Rostowzew on laboratory 215
Tannin in galls, origin of 274
Taxonomy 70, 135, 209, 424
Tendril, Noll on mechanics of coiling 214
Terminalia chebula, galls on 276
Texan fungi, Long on 429
Thalictrum, Davis on 282
Thaxter, Roland, personal 142
Thelypodium auriculatum 60
Thermostat, Czapek on 287
Thériot, I. 12
Thiry, G. 378
Thomas, Ethel N., work of 213, 428
Tilletia *Moliniae* 273
Timberlake, H. G. 73, 154
Tofieldia, Rydberg on 425
Torrey Day, celebration of 431
Toumey, J. W., personal 72; work of 213
Townsendia, Piper on 210
Toxicity, of acids and salts, True on 140; of sodium salts, Kahlenberg and Austin on 358
Travel, notes on 125
Trelease, Wm., personal 216
Trentepohlia virgatula 409
Trichia fallax 217
Trichostomum, dicranoides 17; **macrostegium** 17
Trillium sessile 176
Trimmatostroma abietina 401
Triplochitonaceæ, Schumann on 135
Tripterocladium leucocladulum **camptocarpum** 22
Trisetum, Nash on 71
Triticum vulgare 69
Troximon, Suksdorf on 424
True, R. H., personal 142; work of 140
Tulipa, double fertilization in 252
Types in botanical nomenclature, Cook on 427

U

Ule, work of 428
Ulva lactuca 409
Underwood, L. M., personal 430; work of 71
Urban's "Flora of the West Indies" 421
Uredineæ, Plowright and Magnus on 405
Utricularia, Meister on 70

V

Valerianella, Suksdorf on 424
Van Hook, J. M. 394
Variation, De Vries on 405; Gallardo on statistical methods in 405; Krasan on 405
Veratrum, Rydberg on 425
Verbena, hastata 130; Macdougalii 130; stricta 130; urticifolia 130

Verbenaceæ, Gürke on 135
Veronica peregrina, Heinricher on 215
Viburnum, Suksdorf on 424
Vicia Faba, cell plate of 83
Vilmorin, work of 405
Viola, atriplicifolia 193; Pollard on 70; **Thorii** 193
Violet, Pollard on 425
Vitis rotundifolia 407

W

Wager, Harold, work of 210
Warburg's "Monsunia" 207
Ward's "Cycadeoidea of the Black hills" 419
Warnstorf, C., work of 210, 213
Washington plants, Suksdorf on 135, 424, 425
Washingtonia divaricata 63
Water, bacteriological examination of the Chicago drainage 143; plants, Kny on extra-cellular plasma in 286
Waugh, F. A. 206
Webb, J. E., personal 72
Webber, H. J., work of 138, 284
Webera, carinata 20, 123; commutata 20; cucullata *carinata* 20, 123; curvirostris *commutata* 12
Weisia, viridula 13; viridula gymnostomoides 13; *Wimmeriana* 13
West Virginia plants, Morris on 425
Wheeler, W. A., work of 282
Wiegand, Karl M. 25; work of 210, 425
Wiesner's "Die Rohstoffe des Pflanzenreiches" 66, 279
Wildeman, E. de, work of 71, 405
Williams, Émile F., personal 142
Willows, Coville on 425; Rowlee on 71; Seaman on 425
Wilson's "The cell" 65
Woods, A. F., personal 431; "Stigmonose" 281
Wordsdell, W. C., work of 137
Wright, W. F., work of 424
Wyoming plants, Nelson on 71; new species of 117

X

Xenia, deVries on 212; Webber on 284

Y

Yale Forestry School 430
Yasuda, Atsushi, work of 285
Yeast, Cremer on enzymes of 211; determination of 404

Z

Zeiller, R., "Éléments de Paléobotanique" 416
Zostera marina 410
Zukal, Hugo, death of 216
Zygadenus, Rydberg on 425